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## Postcard

## Response to Postcard from Sweden

To the editor,

I am not persuaded that JCFM is the proper venue for the sort of discussion Jones invites, but I do think he raises some important scientific issues and those I am happy to address.

The presence of 6MAM does, indeed, confirm heroin use. I already knew that. Mr. Lidell was being given heroin continuously, via a syringe driver. 6MAM would have probably been present in the cadaver, although given the complete absence of stability studies on this subject, I would prefer not to make any assumptions I cannot prove. 6MAM has not been measured in any patient receiving continuous subcutaneous heroin. Had this metabolite been measured, I know of no evidenced-based method by which the results could have been interpreted. I continue to think its measurement was utterly irrelevant to the case.

Professor Skopp did, indeed, publish an in vitro study demonstrating that morphine is relatively stable, but that is not the issue. At trial she, like I, argued that morphine concentrations, especially those measured in blood taken from a cadaver that had been stored at room temperature for 4 days, were an inherently unreliable predictor of perimortem concentrations. Jones may wish to contact Professor Skopp and attempt to dissuade her from her conclusions.

Jones correctly states that, on average, the decedents studied by Gerostomolus and Drummer spent 15 h at ambient temperature before mortuary intake, and then another 44 h prior to sample collection. Mr. Lidell's cadaver was stored at ambient temperature for more than 90 h before samples were collected. The logic of this comparison escapes me. Is Jones suggesting that because no

changes occur at 16 h, none will have occurred by 90 h? I know of no evidence to support such a conclusion.

Postmortem hydrolysis can generate free morphine from the glucuronide; the higher the temperature and the longer the body is stored, the higher the free morphine concentration,<sup>1</sup> an unfortunate, but proven, reality that can lead to erroneous conclusions in certifying narcotic deaths.

The charges against the late Dr. Moor were based entirely on the ratio of free to conjugated morphine. Fortunately, neither the judge nor the jury was willing to accept this pseudoscientific argument. Rather, they accepted the evidence-based conclusion that the decedent had suffered a myocardial infarction 10–14 days earlier. As an cardiac pathologists knows, 2 weeks after an infarct is the vulnerable period when sudden death is most likely to occur, as it did in the case of poor Mr. Lidell.

## Conflict of Interest

None declared.

## Reference

1. Carroll FT, Marraccini JV, Lewis S, Wright W. Morphine-3-D glucuronide stability in postmortem specimens exposed to bacterial enzymatic hydrolysis. *Am J Forensic Med Pathol* 2000;**21**(4):323–9. December.

Steven Karch MD, FFLM  
(Consultant Pathologist and Toxicologist)

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